siam 2022 | Conference on the Life Sciences

2022 SIAG/LS BUSINESS MEETING

siam | Society for Industrial and Applied Mathematics

2022 SIAG/LS

Hybrid: SIAM Conference on the Life Sciences

Life Sciences Business Meeting

Tuesday, July 12th, 7:15-7:45 pm ET
Spirit of Pittsburgh B - 3rd Floor
David L. Lawrence Convention Center
Pittsburgh, PA, U.S.

SIAG/LS Officers

Chair:
Krešimir Josic

*

Vice Chair:
Dean Bottino

*

Program Director:
Nick Cogan

*

Secretary:
Alexandra Jilkine

SIAG/LS Announcements

- SIAM Engage:
  - https://engage.siam.org/communities/siag-ls-home?CommunityKey=48ce65e3-7173-43fa-8741-75341904b84e
  - SIAG/LS websites:
  - https://www.siam.org/membership/activity-groups/detail/life-sciences
- SIAM News: Story Ideas
- SIAM Blogs
- SIAG/LS Leadership Suggestion Form:
  - https://www.siam.org/forms/siam-activity-group-leadership-form

SIAG/LS Fellows

Class of 2021

Denise Kirschne

Qing Nie

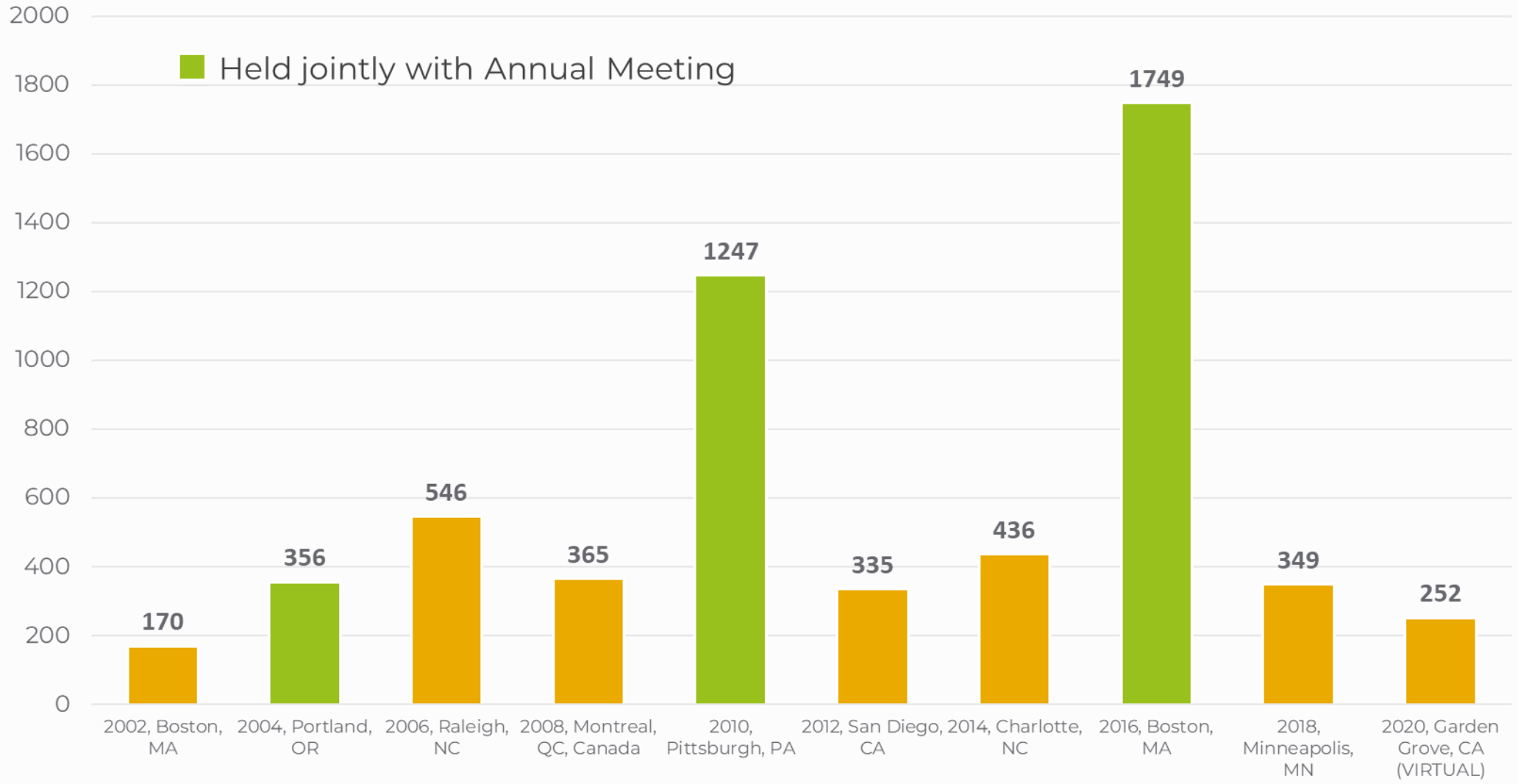
Jonathan Rubin

Class of 2022

Bonnie Berger

Abba Gumel

SIAG/LS Conference History



SIAG/LS Conference 2022

Organizing Committee Co-Chairs

Nick Cogan, Florida State University, U.S.
Angela Reynolds, Virginia Commonwealth University, U.S.

*

Organizing Committee

Ruth Baker, University of Oxford, United Kingdom
Stephen Coombes, University of Nottingham, United Kingdom
Sara Del Valle, Los Alamos National Laboratory, U.S.
Flavio Fenton, Georgia Institute of Technology, U.S.
Anita Layton, University of Waterloo, Canada
Joceline Lega, University of Arizona, U.S.
Katarzyna Rejniak, Moffitt Cancer Center, U.S.
Deena Schmidt, University of Nevada, Reno, U.S.
Sebastian Schreiber, University of California, Davis, U.S.

SIAG/LS Conference 2022

SIAG/LS Early Career Prize

Model Order Reduction of Limit Cycle Oscillators Far Beyond the Weakly Perturbed Limit

Thursday, July 14th, 11:45 AM - 12:15 PM ET

Room: Spirit of Pittsburgh B - 3rd Floor

In the decades since Art Winfree's pioneering work on phase models for nonlinear, high-dimensional oscillators, the overwhelming majority of theoretical analysis in this field has been performed in the weakly perturbed limit. Comparatively very little is understood about limit cycle oscillators in response to arbitrary, strong perturbations, mostly due to the lack of viable reduction strategies for considering large magnitude inputs.

In this presentation, I will discuss recent work that uses isostable coordinates, which characterize level sets of the slowest decaying eigenmodes of the Koopman operator, in conjunction with phase-based techniques to yield analytically tractable reduced order models that are valid in the strongly perturbed regime. Applications involving phase resetting of circadian rhythms following rapid travel across multiple time zones, elimination of a cardiac arrhythmia that represents a precursor to cardiac arrest, and phase locking of neural rhythms in response to strong synaptic coupling illustrate the utility of these new methods in situations where standard, phase-only techniques fail. Data-driven methods for inference of phase-isostable-based models will also be discussed for use when the underlying dynamical equations are unknown or unavailable.

Dan Wilson

University of Tennessee, Knoxville, U.S.

Gene Golub SIAM Summer School

Financial Analytics: Networks, Learning, and High Performance Computing

August 1–12, 2022

Gran Sasso Science Institute (GSSI), L'Aquila, Italy

https://siam2022.gssi.it/

The school will offer an introduction to Quantitative Risk Management in Finance, Energy and Commodity Markets, Machine Learning and Financial Technology, and Mean field Games. Students will be exposed to the economic and managerial implications of these subjects, and to tools of applied probability, optimization, and computational techniques.

Gene Golub
SIAM Summer School 2022

For more information on GGSS visit: https://www.siam.org/students-education/programs-initiatives/gene-golub-siam-summer-school

Future conferences?

LOCATION

DATES

THEMES

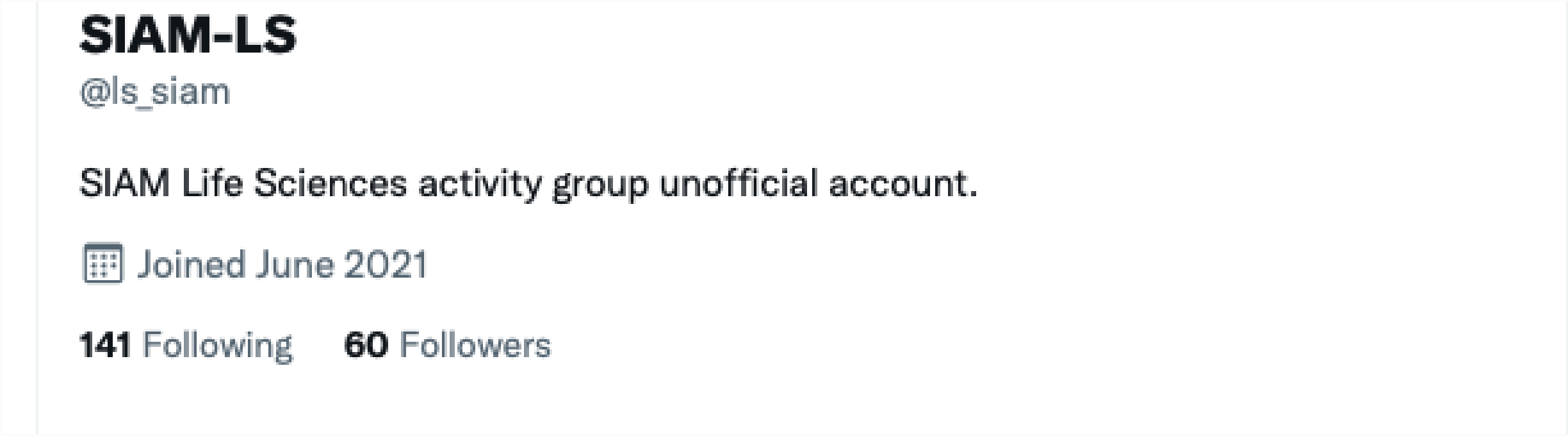
Join SIAM Today!

Benefits of SIAM Membership Include……

- *SIAM Review* (Print & Electronic)
- *SIAM News* (Print)
- 30% Off SIAM Books
- $15 / Activity Group Membership
- 20% - 30% Off Registrations
- 80% Off Journals (up to 4)
- 95% Off e-Access to Journals
- Spouse may join as Associate Member
- *SIAM Unwrapped*
- Vote in SIAM Elections
- Eligible to Hold Office
- Eligible for Committee Appointments
- Nominate SIAM Fellows
- Be Nominated as a SIAM Fellow
- Eligible for Group Insurance
- Nominate 2 Students for Free Membership
- Qualifying Student Members can join 2 SIAGs for *free*!

Nonmember attendees can save up to $155 their 2022 membership!

Follow SIAM-LS on Twitter!



2022 SIAG/LS

Membership Report

(data as of December 31, 2021)

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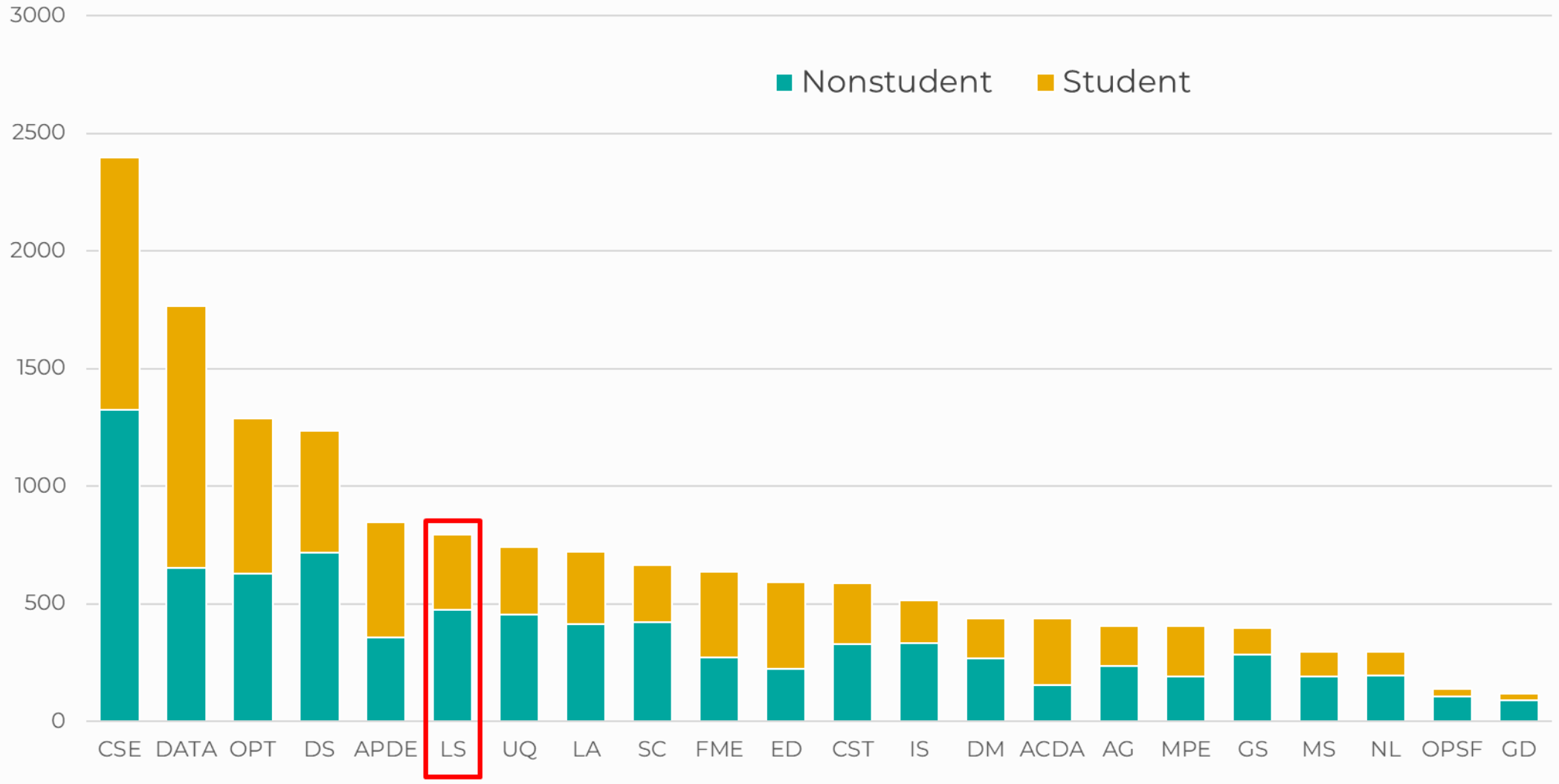
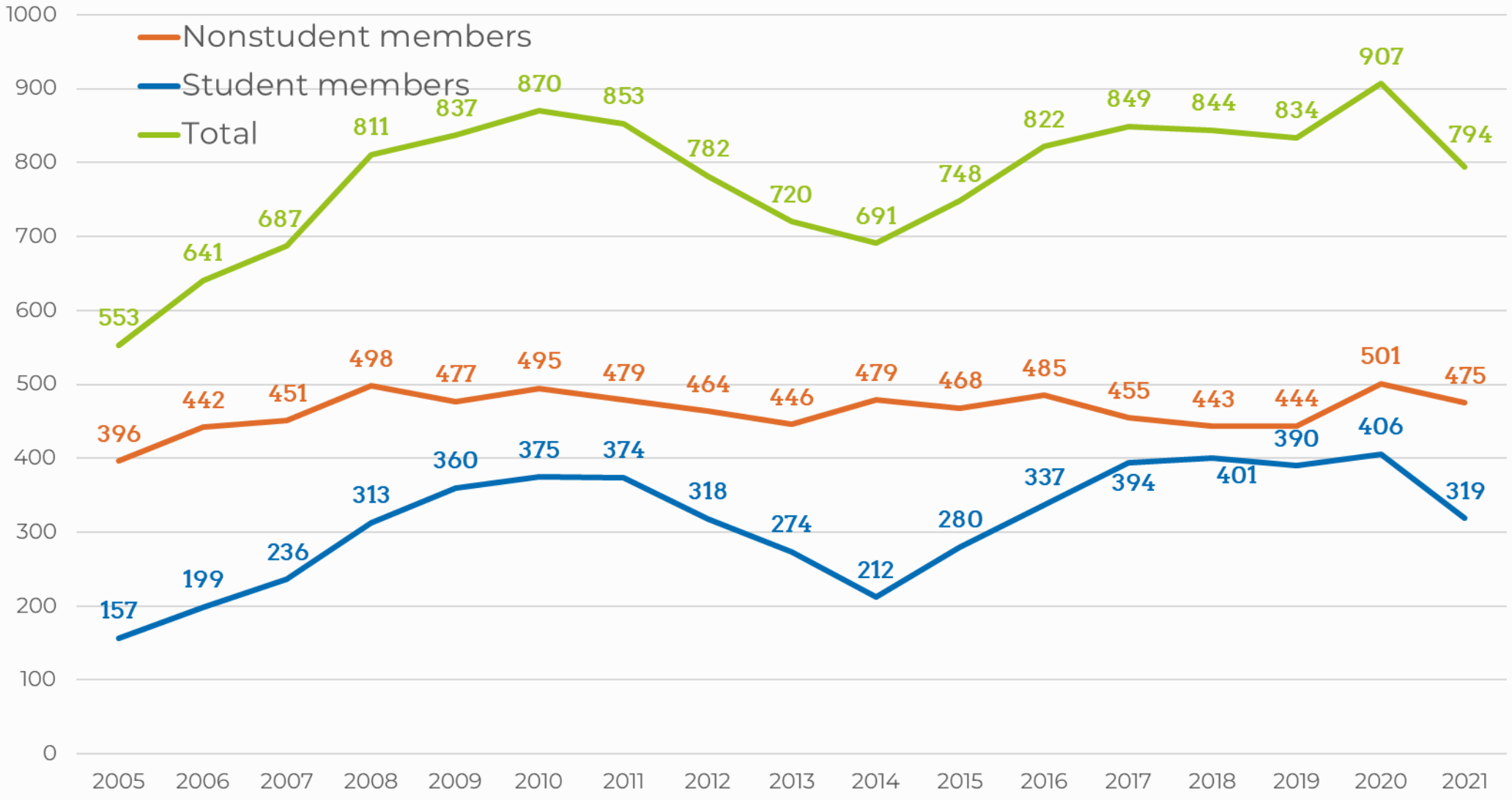
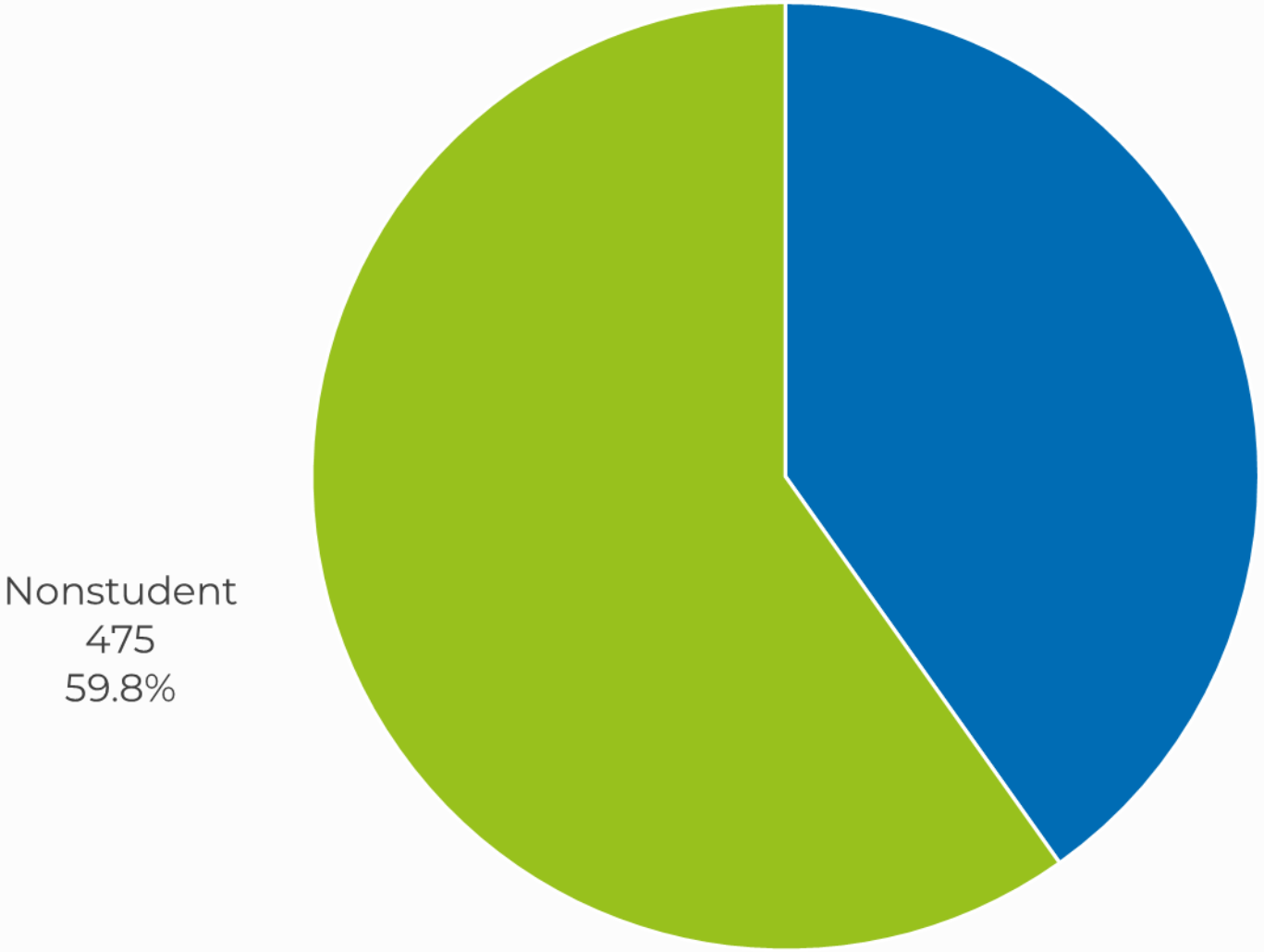
SIAG Overall Membership



SIAG/LS Membership Demographics



SIAG/LS Membership Demographics

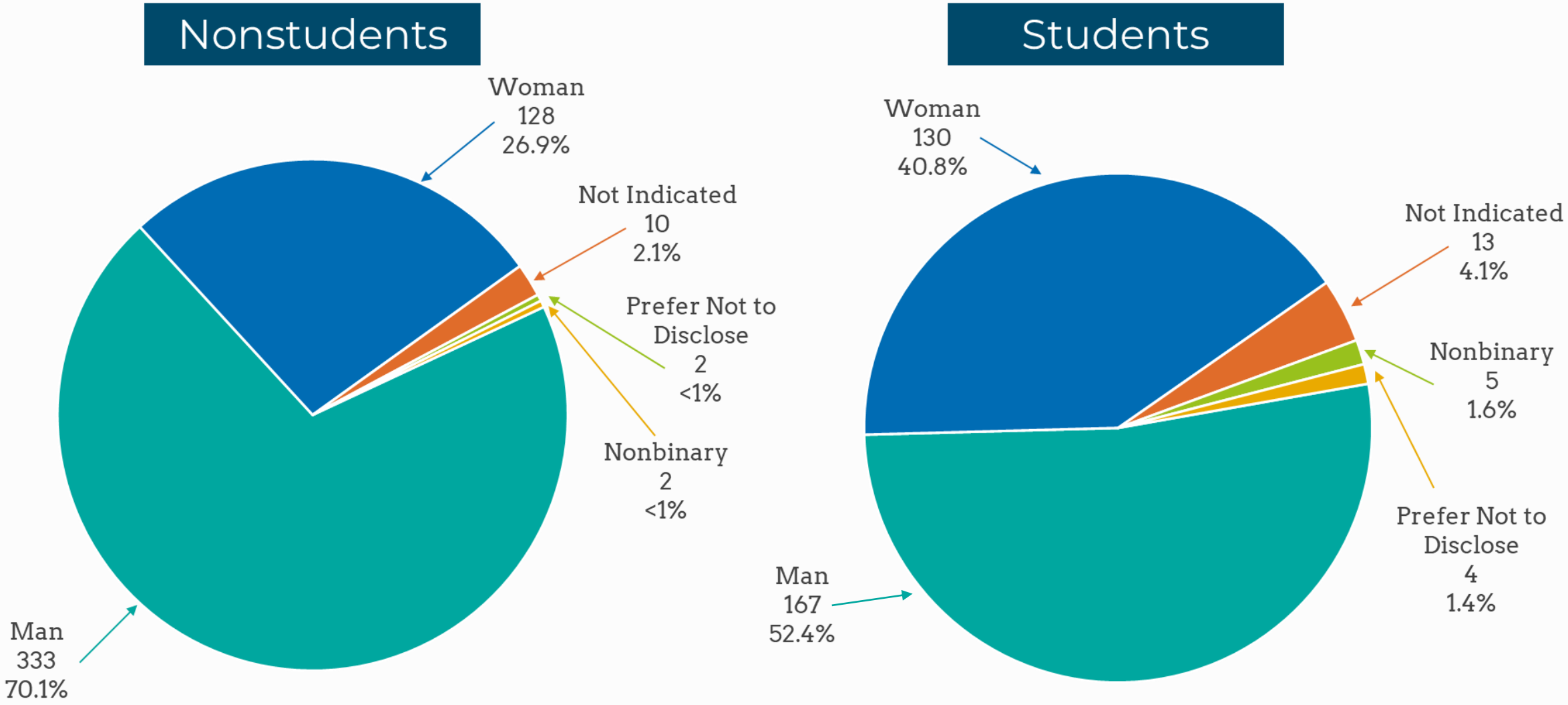


Members can sponsor up to two students for free! Students get two SIAG memberships for free.

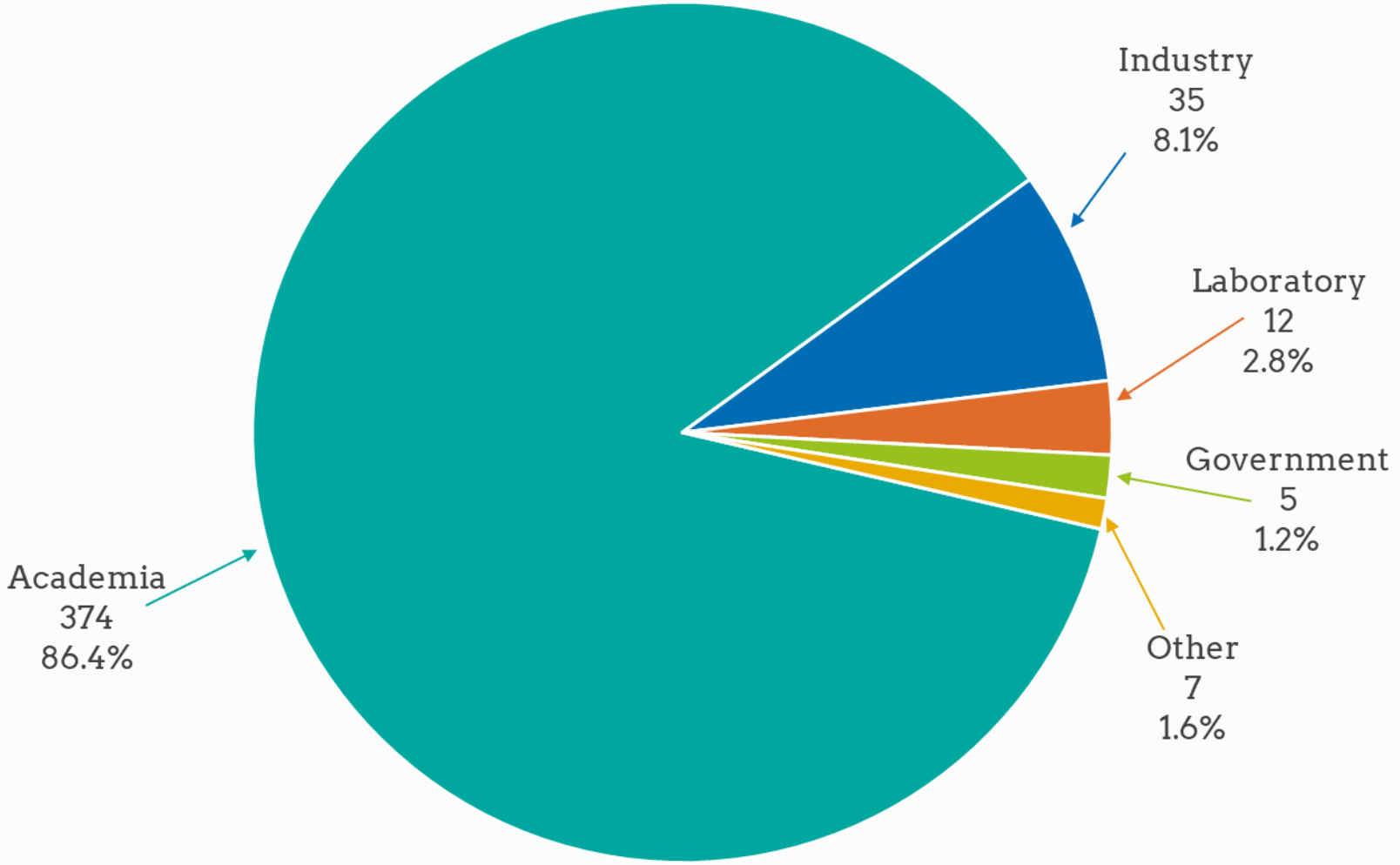
SIAG/LS Membership by Geography

	US		Non-US		Total	
Nonstudent	366	46%	109	14%	475	60%
Student	229	29%	90	11%	319	40%
Total	595	75%	200	25%	794	

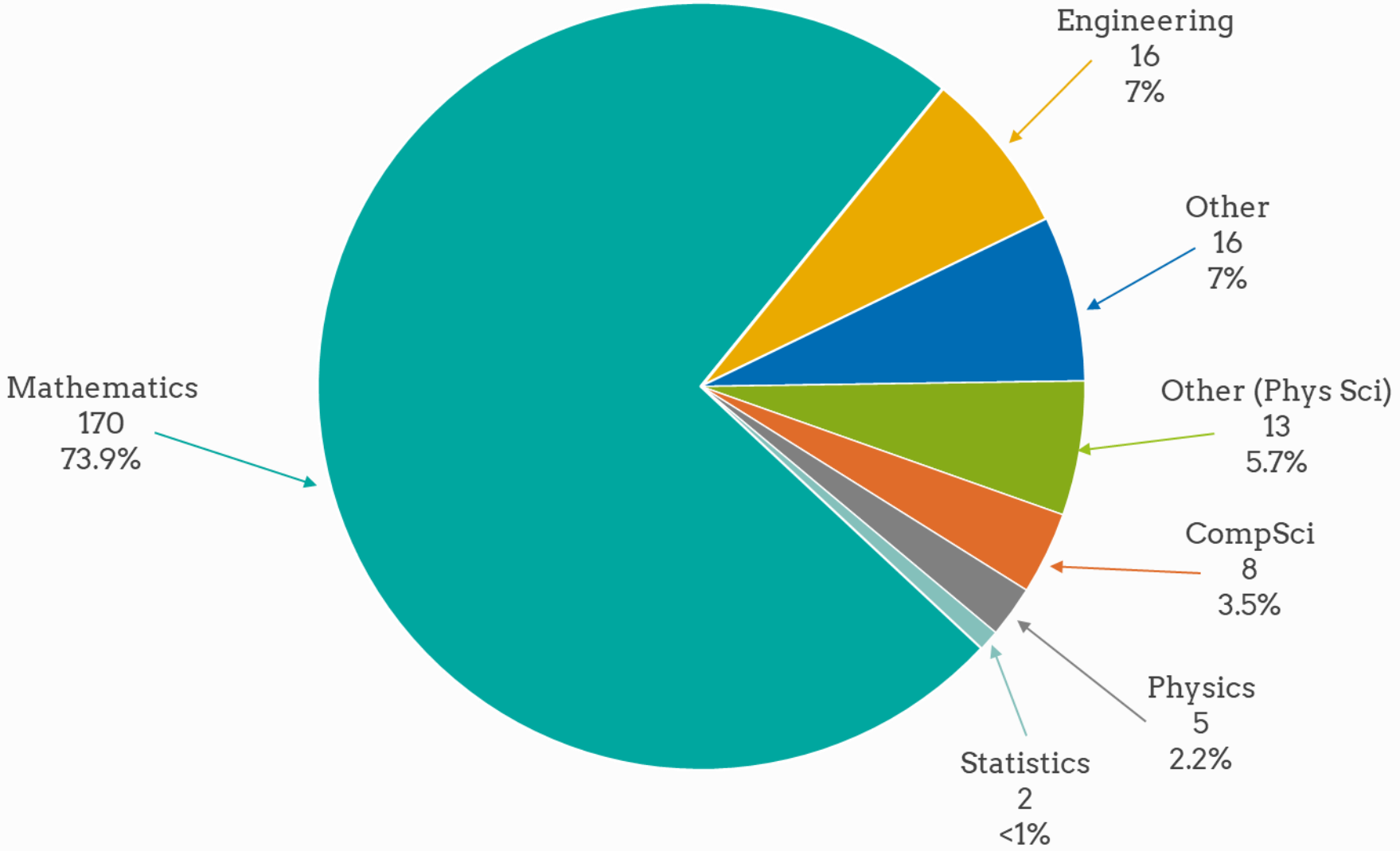
SIAG/LS Membership by Gender



SIAG/LS Membership by Employer Type



SIAG/LS Membership by Department Type



Other Business

Contacts

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Program Director	Nick Cogan cogan@math.fsu.edu
Secretary	Alexandra Jilkine ajilkine@nd.edu

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